Readiness of future teachers for the socialization of children with special educational needs in an inclusive environment

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Abstract

This article addresses the issue of developing the readiness of future teachers to support the socialization of children with special educational needs (SEN) within an inclusive educational environment. The aim of the study is to explore the correlation between future teachers' preparedness for professional activity in inclusive settings and the success of socialization processes in children with SEN. The research employed a mixed-methods approach, including observation, interviews, an experimental procedure, and the application of several diagnostic tools: an author-developed questionnaire titled "Readiness of Future Teachers for the Socialization of Children with SEN," M.I. Rozhkov's methodology for assessing the level of student socialization, A.I. Zakharova's method for evaluating childhood anxiety levels, the "Ladder" technique, analysis of school records, and statistical data processing. The study highlights the critical importance of professional skills, specifically diagnostic, adaptive, and communicative competencies, in facilitating the effective integration of children with SEN into both educational and social contexts. The findings confirm the need to intentionally develop these competencies during teacher education. Based on the analysis, methodological recommendations are proposed for enhancing the content and structure of pedagogical training within the framework. Further research may focus on organizing extracurricular activities for children with SEN, providing support.

Keywords: Educational environment, Inclusive education, Socialization, Special needs, Teacher readiness.

1. Introduction

The importance of creating an inclusive environment to facilitate the successful socialization of children with special educational needs (SEN) has become a central concern of both the education system and academic discourse. Children with SEN are now recognized as equal participants in the educational process, which demands not only subject-matter competence from teachers but also a high level of preparedness for effective interaction with these students. Successful social integration of children with SEN is possible only if future educators possess specific knowledge, practical skills, and personal qualities. Consequently, the emphasis on preparing educators capable of developing inclusive learning environments that address individual student needs has significantly increased.

This research contributes to global scientific practice by introducing applied approaches and offering a novel perspective on the issue of future teachers' professional readiness to implement inclusive environments, particularly within the context of Kazakhstan. The study draws on the works of international scholars as well as national and international regulatory frameworks addressing teacher preparedness for professional practice in inclusive settings.

For example, P. Parida emphasizes that inclusive education is one of the essential conditions for a school's success [1]. Scholars such as Kantor, et al. [2] have highlighted the insufficient development of teachers' professional competencies in organizing psychological and pedagogical support, leisure activities, and creating safe and supportive inclusive environments for students with disabilities Kantor, et al. [2]. Emelyanova, et al. [3] and colleagues emphasize the importance of teacher readiness to develop communication skills in students with SEN as a condition for successful socialization and adaptation [3].

Reports from the International Disability Alliance (IDA) also emphasize the need to provide inclusive education throughout the lifespan for individuals with disabilities. Researchers such as Crea T.M. and Klein E.K. argue that an inclusive environment helps dismantle disability-related barriers, fosters peer relationships, and promotes psychosocial well-being [4]. Lugovaja and Chernikova [5] similarly point out the positive impact of inclusion on the social development of students with SEN, enabling them to realize their potential and assimilate social norms and behavioral expectations [5]. Thus, ensuring teachers are prepared to support the socialization of children with SEN in inclusive environments has become a critical objective.

Inclusive education has been formally implemented in Kazakhstan since 2011, with ongoing efforts to create supportive environments for students with SEN. Various aspects and key concepts of inclusion are reflected in regulatory documents, and relevant legislative measures have been adopted. In 2021, President Kassym-Jomart Tokayev signed the Law "On Amendments and Additions to Certain Legislative Acts of the Republic of Kazakhstan on Inclusive Education," which introduced government-funded psychological and pedagogical support in educational institutions, imposed accountability on school leaders for the lack of accommodations for students with SEN, and initiated programs for medical, psychological, and educational consultations [6].

In 2022, the Minister of Education and Science of the Republic of Kazakhstan issued an order approving the "Rules for Assessing Special Educational Needs," which outlined procedures and standards for evaluating students' educational requirements in order to organize appropriate conditions for learning and development [7]. In discussing implementation strategies, Abdizhamalova, et al. [8] proposed the development of interagency collaboration and enhanced teacher preparation to support children with SEN [8].

According to Tastajbaeva [9] the availability of specialized programs and resources is a key factor in fostering inclusive educational environments that support the active involvement of children with SEN in both learning and social activities [9].

Despite improvements in the legal and methodological foundations of inclusive education, several challenges remain. Experts note gaps in technological support, insufficient teacher training, and poor coordination among support services.

Hypothesis and Research Objective

The hypothesis of this study is that the deliberate development of diagnostic, adaptive, and communicative skills during teacher training will increase future educators' readiness to support the socialization of children with SEN in inclusive environments. This, in turn, will contribute to their successful integration into society by addressing their needs and abilities.

The objective of this study is to examine the relationship between teacher readiness for professional activity in inclusive settings and the success of socialization processes in children with SEN. Achieving this goal enabled the collection of substantial empirical data on the personal and professional preparedness of future teachers, as well as an analysis of the role of key professional skills, diagnostic, adaptive, and communicative in promoting the socialization of students with SEN.

1.1. Research Questions

1. What are the scientific and theoretical perspectives on the socialization of children with SEN and teacher readiness to work in inclusive environments?

2. What is the content and significance of professional skills (diagnostic, adaptive, communicative) for the socialization of students with SEN?

3. What factors contributing to the successful socialization of children, including those with SEN, are highlighted in academic literature?

4. How should future educators incorporate these factors when organizing inclusive educational environments?

The research is based on an analysis of normative documents related to inclusive education, including the Unified Educational Upbringing Program for schools and colleges approved by the Ministry of Education of the Republic of Kazakhstan in 2023 [10] as well as data from surveys conducted among students, teachers, and parents.

The first section analyzes existing research on the preparedness of future teachers to work with children with SEN and explores factors influencing their socialization. It also includes the results of a survey conducted among senior-year students in teacher education programs and outlines the content of professional competencies essential for inclusive practice. The second section considers the inclusive environment as a fundamental condition for successful socialization, emphasizing the role of teachers and parents in creating such an environment. The third section presents the outcomes of a practical study involving fifth-grade students, including those with SEN, during pre-graduation internships of education students. The purpose was to assess teacher candidates' readiness to facilitate the socialization of children with SEN. This section also includes methodological recommendations.

2. Literature Review

Socialization is a complex, multi-level process that occurs throughout a person's life, during which they learn to interact with other people and the world as a whole. The term "socialization" as a process of human development began to be used at the end of the 19th century [11]. Initially, socialization was viewed as a process of adapting the individual to society, in which the individual takes a passive role, i.e., the individual was seen as an object of socialization, with personality development depending on how well one could adapt to social conditions and fulfill required roles in society [11]. A person acts as an object when, in the process of socialization, they internalize the norms, values, attitudes, and behavior models of the society in which they live [12].

Gradually, ideas began to emerge that positioned the individual as a subject of socialization, emphasizing that the individual not only adapts to society but also brings their own personality into relationships with others and with society as a whole [13]. Humanistic psychologists [14] took this even further, asserting that the individual develops through personal resources and self-education.

Modern researchers associate socialization with the psychological development of the individual Yesmin [13] the development of social competence Mikas and Roudi [15] and Mihic et al. [16], social and emotional well-being [16] and acquired life experience [17].

Nevertheless, when characterizing the process of socialization, experts whose views we fully support highlight three key aspects: adaptation to societal conditions; integration and acceptance of the surrounding world; and autonomization, which involves influencing and transforming the environment [18].

In our research, we will consider socialization as a continuous process of interaction between the individual and society, during which a person assimilates the norms, values, and knowledge necessary for life in society and contributes to social transformation through the performance of various roles and functions.

Successful socialization is not only a key to personal happiness and well-being but also an essential condition for a healthy and harmonious existence in society, as it enables individuals to live without conflicts, issues, or difficulties. Various social, political, and economic challenges can limit, hinder, or complicate the socialization process. Children with special educational needs (SEN) are particularly vulnerable in this context, as they face greater difficulties in adapting to society. Undoubtedly, attending educational institutions can significantly enhance the socialization of children with SEN, providing them with opportunities to develop communication and interaction skills with other members of society, including neurotypical peers, and enabling them to gain social acceptance.

Children with special needs often experience difficulties in socialization, which are manifested in deviations from the normative path of personality development. For instance, such children may struggle to communicate with others, have trouble expressing emotions, suffer from low self-esteem and anxiety, and find it difficult to plan or organize their future. Research and observations clearly show that children with health impairments are generally less accepted by peers, interact awkwardly and inappropriately in social situations, and often remain socially invisible [19].

The only effective pathway for the successful socialization of children with SEN is their inclusion in an inclusive educational environment. In the scientific literature, an inclusive environment is defined as a set of special educational conditions established by the state to integrate individuals with special needs into society. In many sources, the term "inclusive environment" is used alongside "inclusive educational environment," which implies not only the creation of special conditions for teaching, upbringing, and developing a child with SEN but also the transformation of the educational institution's structure and its activities. These transformations aim to address the challenges of joint education for diverse student groups by ensuring a dynamic alignment between environmental conditions and the individual capabilities and educational needs of each learner [20].

3. Materials and Methods

The study employed a combination of theoretical and empirical methods. A comprehensive theoretical analysis was conducted on psychological and pedagogical literature concerning the readiness of future teachers to work with children with special educational needs (SEN) in inclusive educational settings, as well as the processes involved in the socialization of such children. Additionally, school documentation was examined, including class journals, support and educational plans, student files, and medical records. Empirical methods included observation, interviews, experimental work, and the administration of various diagnostic tools. These comprised a custom-designed questionnaire titled *"Readiness of Future Teachers for the Socialization of Children with SEN"*, and the *"Assessment of Student Socialization Level"* method developed by Rozhkova [14] technique for evaluating children's anxiety levels [21] and the *"Ladder"* method [22]. The

analysis of school documentation, along with observational data and interviews with homeroom teachers, parents, and students, allowed the researchers to assess the level of personality development, academic performance and to identify children with SEN. The objective of Rozhkova [14] methodology was to assess indicators such as social adaptation, autonomy, moral development, and active participation in social life. The tool consists of 20 items rated on a 5-point Likert scale from 0 ("never") to 4 ("always"). Zaharova [21] diagnostic tools were utilized to examine respondents' current psychological states and their levels of trust in society and their social environment. Since successful socialization is closely related to and influenced by a child's self-esteem and, in turn, affects their development the *"Ladder"* method was employed. This tool enabled the assessment of children's self-perception, their understanding of how they are perceived by others, and the interconnection between self-image and perceived social evaluation.

4. Results and Discussion

The primary objective of this study was to assess the level of competence among final-year pedagogy students in creating an inclusive educational environment and to examine how this environment facilitates the effective socialization of children with special educational needs (SEN). To achieve this, two main parameters were identified for evaluating the readiness of future teachers:

1. The students' self-assessed proficiency in diagnostic, adaptive, and communication skills related to working with children with SEN.

2. Their demonstrated ability to construct an inclusive educational setting conducive to the successful social integration of children with SEN.

Three key categories of professional skills required for the effective socialization of SEN students were outlined:

• Diagnostic Skills – The ability to identify individual characteristics and educational needs of children with SEN.

• Adaptive Skills – The competence to design individualized learning paths, apply methods and technologies for pedagogical support, and adapt instructional content and resources.

• Communicative Skills – The capacity to interact meaningfully with children from various SEN categories, collaborate with parents and specialists (e.g., tutors, special educators, psychologists, and social workers), and demonstrate patience and empathy.

A custom-designed questionnaire was administered, consisting of five questions aligned with these skill groups. Respondents were asked to evaluate their own proficiency using a five-point Likert scale. A total of 50 final-year students from pedagogical programs participated in the survey. The results were calculated by determining the average score for each item and converting the scores into percentages using Equation 1.

$$\frac{\text{Average score}}{5} \times 100\% \tag{1}$$

The findings are summarized in Table 1.

Table 1.
Survey Results: "Readiness of Future Teachers for the Socialization of Children with SEN"

Skill Group	%	Skill Description	Avg. Score
Diagnostic Skills	70.88%	Identifying strengths and weaknesses in a child's development	3.42
		Assessing cognitive characteristics of children with SEN	3.62
		Observing behavioral and emotional states of children with SEN	3.68
		Analyzing academic performance based on individual abilities	3.46
		Referring a child to a relevant specialist when necessary	3.54
Adaptive Skills	74.1%	Designing individualized educational trajectories	3.04
		Applying pedagogical methods to support socialization	3.70
		Creating adapted tasks and materials for children with SEN	4.04
		Facilitating collaborative activities between SEN and typically developing peers	4.04
Communicative Skills	73.4%	Building trust-based relationships with children with SEN	3.88
		Establishing cooperation with parents and specialists	3.58
		Demonstrating patience in communication with children facing social and communication challenges	3.56
		Showing empathy when interacting with withdrawn children with SEN	3.66

As we can see from the table, the level of formation of diagnostic skills is 70.88%, which can be considered a satisfactory result. Future teachers possess basic diagnostic skills, but they do not always apply them confidently or systematically. Possible reasons for this "partial readiness" may include insufficient practical experience working with children with special educational needs (SEN), uncertainty in using diagnostic methods, and a lack of interdisciplinary collaboration with specialists.

The level of development of adaptive skills is slightly higher, at 74.1%, which also indicates a positive assessment of the level of readiness and a good level of adaptive skills development. This enables future teachers to develop adapted assignments and organize joint activities for children with SEN and their neurotypical peers with relative confidence. At the

same time, they do not fully master the skills needed to develop an individual educational pathway. It is likely that students need more in-depth study of the variability of adaptation strategies in mixed-group settings.

Communication skills are at a level of 73.4%, indicating that the foundations of effective communication with children with SEN have been established. The surveyed students demonstrated a tendency toward empathy and establishing pedagogical contact. They possess the basics of pedagogical communication and are capable of building rapport with children with SEN. However, they have underdeveloped skills in interacting with parents and specialists, likely due to a lack of practical experience. They also lack sufficient communication skills when working with children who have communication difficulties.

Thus, we can conclude that the readiness of future teachers to support the socialization of children with SEN is at an above-average level. In our view, the readiness of future teachers for the socialization of children with SEN is a complex professional and personal quality, reflected in the development of diagnostic, adaptive, and communication skills aimed at creating conditions in which a child with SEN can successfully integrate into society, interact with others, and learn social norms and roles.

According to the regulatory and legal documents of the Republic of Kazakhstan, particularly the Law "On Amendments and Additions to Certain Legislative Acts of the Republic of Kazakhstan on Education," the content of psychological and pedagogical support for children with SEN is defined, and 15 special conditions for students with SEN are identified. Educational institutions are required to implement these conditions. Four of them are specifically aimed at the socialization of children with SEN: the creation of a barrier-free environment and adaptation of the learning space; support from a social pedagogue; assistance from a school psychologist; and the provision of an individual assistant for children with disabilities who have mobility challenges, among other measures.

As part of preparing future teachers to support the socialization of children with special educational needs (SEN), we deliberately included several modules in the course *"Methods of Teaching Children with SEN in Inclusive Education Settings"*, aimed at developing diagnostic, adaptive, and communication skills:

1. Psychological and pedagogical features of the socialization of children with SEN
2. Methods for diagnosing social adaptation and interaction
3. Psychology of inclusion and interaction in diverse groups

During practical sessions with students, we used various methods and technologies to develop professional competencies, such as case studies, training sessions, exercises, project-based learning, peer teaching, business and role-playing games, art therapy techniques, dramatized activities, and practice-oriented tasks.

For example, to develop diagnostic skills, we used analysis and discussion of case studies, allowing students to examine real or simulated situations involving interaction with children with SEN, conducting psychological and pedagogical assessments based on the profile of a child with SEN, determining levels of socialization, and identifying individual needs. We also conducted training sessions on interpreting the results of diagnostic tools.

To develop adaptive skills we took into account the recommendations of Johansson and Sandberg [23] who argue that the process of training future teachers should be carried out in situations of learning and knowledge development in practice, in this regard, we as well as they were based on the theories of interaction and intersubjectivity [23]. Therefore, we offered students assignments involving business and role-playing games to simulate an inclusive educational environment, analyze successful cases of socialization of children with various types of SEN (visual, hearing, and musculoskeletal impairments, emotional and behavioral disorders, speech difficulties, etc.), and filled the content and variants of assignments with our own material, considering the realities of Kazakhstani conditions. We also provided students with tasks focused on developing adaptation programs and strategies to enhance social skills in students with SEN, creating adapted learning materials, and maintaining related documentation.

To develop communication skills, we conducted training on effective pedagogical and interpersonal communication with children with SEN, their parents, and specialists. Here, we took into account the recommendations of experts Boychuk, et al. [24] who believe that it is important for future teachers to form an attitude toward a child with disabilities as a person with his/her individual inner world, desires, hopes, and fears [24]. Therefore, we offered tasks involving the analysis of psychological characteristics of children with SEN and modeling communication and interaction situations that consider these psychological traits. Simultaneously, we assigned activities aimed at enhancing active listening through methods such as art therapy, storytelling, and drama-based exercises. Tasks also included developing individual educational pathways based on each child's psychological-pedagogical profile or the recommendations of a psychological-medical-pedagogical commission, with an emphasis on social skills development, project preparation, and defense related to the socialization of children with SEN.

Let us now consider the extent to which senior-year students have mastered diagnostic, adaptive, and communication skills. The experimental work was conducted during their pre-graduation teaching internship. A total of 300 school students from Astana participated in the experiment, including 60 students with SEN. Among them were 21 students from inclusive schools, 18 from mainstream schools, and 21 from special schools. The remaining 240 were neurotypical students, 150 from general education schools and 90 from inclusive schools.

At the beginning of the internship, students were given the following tasks:
1. Observe a child with SEN and complete an observation checklist.
2. Develop and implement a diagnostic program for the child.
3. Design an individual educational pathway for the child.
4. Plan and conduct lessons and extracurricular activities in classes that include children with SEN.
5. Interact with teachers and specialists, including delivering a presentation at the school's pedagogical council.

6.   Organize and plan work with parents, including conducting a parent-teacher meeting.

To assess the effectiveness of the students' work, we conducted a study at the end of the internship aimed at evaluating the level of socialization of the students using several tools: the methodology of Rozhkova [14] and the "Ladder" ("Lesenka") technique.

According to Rozhkova [14] methodology, we used the following statements (see Figure 1).

1.   I try to always listen to my teachers and parents.
2.   I believe that one should always stand out from others.
3.   Whatever I take on, I succeed in.
4.   I know how to forgive people.
5.   I try to behave the same way as all my friends.
6.   I want to be ahead of others in everything I do.
7.   I become stubborn when I'm sure I'm right.
8.   I believe that doing good for others is the most important thing in life.
9.   I try to act in a way that makes others praise me.
10. When talking with my friends, I stand up for my opinion.
11. If I decide to do something, I will definitely do it.
12. I like helping others.
13. I want everyone to be friends with me.
14. If I don't like someone, I won't talk to them.
15. I always strive to win and come out on top.
16. I feel other people's troubles as if they were my own.
17. I try not to argue with my friends.
18. I try to prove I'm right even if others disagree with me.
19. If I start something, I always finish it.
20. I try to protect those who are being hurt.

Figure 1.
Questions for the Questionnaire on the Study of the Socialization of Schoolchildren's Personality by Rozhkova [14].

After conducting the Rozhkova [14] method, we obtained the following results regarding the level of children's socialization, see Table 2.
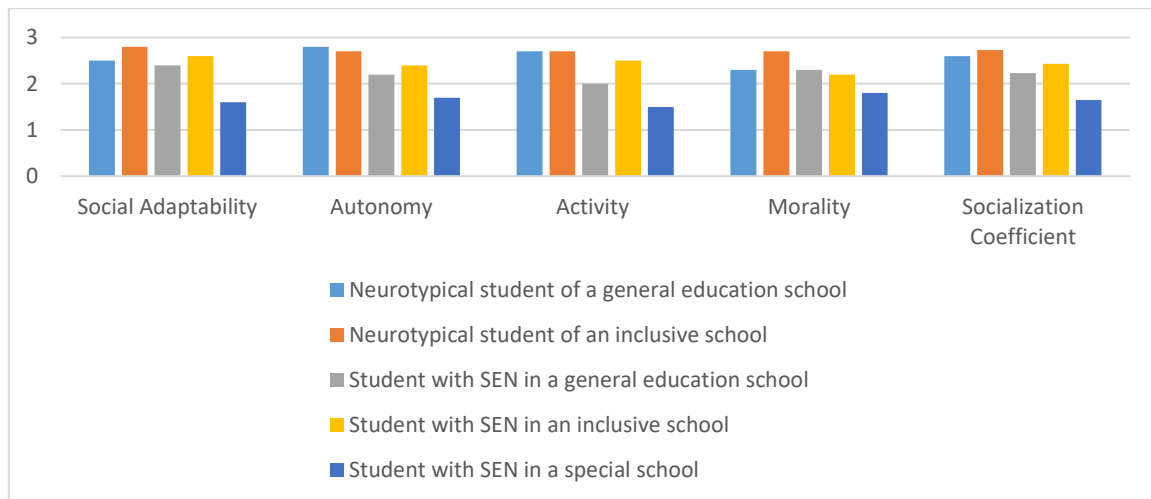
Table 2.
Results of the Assessment of the Level of Socialization According to the Method.

Student Category / Group	Characteristic of the Level of Socialization				
	Social Adaptability Average Score	Autonomy Average Score	Activity Average Score	Morality Average Score	Socialization Coefficient Average Score
A neurotypical student of a general education school	2.5	2.8	2.7	2.3	2.6
A neurotypical student of an inclusive school	2.8	2.7	2.7	2.7	2.73
Student with SEN in a general education school	2.4	2.2	2	2.3	2.23
A student with SEN in an inclusive school	2.6	2.4	2.5	2.2	2.43
A student with SEN in a special school	1.6	1.7	1.5	1.8	1.65

Source: Rozhkova [14]

According to Table 2, we can observe that the highest level of socialization was demonstrated by neurotypical students and students with special educational needs (SEN) from the inclusive school. The lowest level of socialization was observed among students from the special school. The students from the special school were included for comparison purposes only; no additional work was carried out with them, and the student teachers did not complete their practicum at the special school. The analysis of the results using this method shows that the inclusive environment contributes to more successful socialization of children. For a clearer illustration, the results are presented in the figure (see Figure 2).

Figure 2.
Results of the Assessment of the Level of Socialization According to the Rozhkova [14] Method.

It is important to recognize that the level of socialization is influenced by a variety of additional factors. The methodology presented here enables the exploration of several dimensions of the socialization process. The first component focuses on social adaptation: it assesses how well a student interacts within the classroom and broader society, whether they face communication challenges or struggle to build relationships with teachers and peers, and their ability to recognize and differentiate social roles. Results indicate that children from inclusive schools exhibit higher levels of social adaptability, whereas students from special schools scored the lowest. It is worth noting that senior-year education students carried out their teaching practicum exclusively in mainstream and inclusive schools, with a strong focus on facilitating the social integration of students, particularly those with special educational needs (SEN).

The second component evaluates a student's autonomy specifically, their capacity to make independent decisions and perform physical tasks without external assistance. As expected, students with mobility impairments or motor difficulties demonstrated lower levels of autonomy. However, SEN students enrolled in inclusive schools showed greater independence than those in special schools, suggesting that the support and intervention strategies implemented in inclusive settings are more effective in promoting self-sufficiency and social development.

Similar trends were observed in the component assessing social activity. Neurotypical students showed high levels of social engagement, and SEN students from inclusive schools demonstrated comparable results. Students from special schools, however, scored the lowest in this category.

The fourth component relates to moral development. Here, neurotypical students from inclusive schools achieved the highest scores, while students from special schools again ranked the lowest. Other groups showed relatively similar results. These findings suggest that neurotypical students in inclusive settings, who regularly interact with SEN peers, benefit from targeted efforts by educators to cultivate empathy, acceptance of diversity, prosocial behavior, and reduced egocentrism and aggression.

To synthesize the results of these four components, a general socialization index was calculated based on the average scores. Among students with SEN, those in inclusive schools demonstrated the highest overall level of socialization.

In conclusion, students with SEN attending special schools showed the lowest levels of social engagement, which, in our view, may be due to the lack of structured opportunities and programs that encourage active participation. By contrast, students without SEN across all educational settings generally exhibited high levels of social activity. Statistically, SEN students more frequently demonstrate low levels of social engagement.

The moral development component reveals how well a child demonstrates tolerance, understands social etiquette, and expresses empathy skills that are vital for effective socialization. Individuals with lower moral development often face difficulties integrating into society due to misunderstandings or social friction. The highest levels of moral development were observed among neurotypical students in inclusive schools, reflecting the success of educational and parental efforts to instill values of tolerance and ethical behavior. SEN students, meanwhile, displayed moderate levels of moral development.

In summary, based on average scores across all components, SEN students in inclusive environments are more socially integrated than their peers in general or special education schools.

Additionally, we employed [21] method to assess child anxiety levels through a parent-reported questionnaire. This tool includes 15 statements: if the parent agrees with a statement, it is scored as 2 points; if it is observed occasionally, 1 point; and if not observed at all, 0 points. The total anxiety score is calculated by summing these values.

The list of statements is presented in Figure 3.

1. Gets upset easily, worries a lot, and takes everything too personally.
2. Bursts into tears over minor things, cries uncontrollably or whines, grumbles, and can't calm down.
3. Becomes moody or irritated over trivial things, shows impatience, and struggles to wait or tolerate discomfort.
4. Is easily offended, sulks often, and cannot tolerate any criticism.
5. Displays extremely unstable moods — may laugh and cry at the same time.
6. Often feels sad or gloomy without any apparent reason.
7. Has reverted to early behaviors such as sucking on a pacifier or finger, or constantly fidgeting with objects.
8. Has difficulty falling asleep without a light or the presence of loved ones nearby; sleeps restlessly, wakes frequently at night, and feels disoriented in the morning.
9. Becomes overly excitable when needing to control themselves, or becomes sluggish and lethargic when completing tasks.
10. Shows strong fears, anxiety, or timidity in new, unfamiliar, or challenging situations.
11. Displays increasing insecurity and indecisiveness in actions and decisions.
12. Tires quickly, is easily distracted, and struggles to maintain focus for extended periods.
13. Becomes hard to communicate with or reason with, frequently changes decisions, or withdraws into themselves.
14. Complains of headaches in the evening or stomach aches in the morning; often turns pale, flushes, sweats excessively; experiences unexplained itching, allergies, or skin irritation.
15. Has a decreased appetite, frequently falls ill, has unexplained fevers, and often misses kindergarten or school.

Figure 3.
Statements based on Zaharova [21] methodology for assessing anxiety levels.

The results are interpreted using the following scale: 20–30 points – neurosis; 15–20 points – neurosis has occurred or is likely to develop soon; 10–15 points – nervous disorder; 5–9 points – the child requires attention; less than 5 points – deviations are minor and are considered age-related changes.

The survey results were categorized into the following groups: typically developing students in general education schools, typically developing students in inclusive schools, students with SEN in general education schools, students with SEN in inclusive schools, and students with SEN in special schools.

Percentage distributions were then calculated (see Table 3).

Table 3.
Results of students' anxiety level assessment based on the methodology.

Student Category / Group	Characteristics of the anxiety level				
	Neurosis Number of students (%)	Neurosis was or will be Number of students (%)	Nervous breakdown Number of students (%)	Attention to the child is required Number of students (%)	Minor deviations Number of students (%)
A neurotypical student of a general education school	0 (0)	32 (21.3)	36 (24.1)	32 (21.3)	50 (33.3)
A neurotypical student of an inclusive school	0 (0)	14 (15.6)	23 (25.6)	24 (26.7)	29 (32.1)
Student with SEN in a general education school	0 (0)	10 (55.6)	4 (22.2)	4 (22.2)	0
A student with SEN in an inclusive school	0 (0)	6 (28.6)	0 (0)	8 (38.1)	7 (33.3)
A student with SEN in a special school	4 (19.05)	8 (38.1)	4 (19.05)	5 (23.8)	0 (0)

Source: Zaharova [21]

As we can see from the table, the level of anxiety in children with special educational needs (SEN) is higher than that of neurotypical children. At the same time, the anxiety level among children attending inclusive schools is lower compared to those in general education schools. When comparing the anxiety levels of children with SEN in general, inclusive, and special schools, it becomes evident that students with SEN in general education schools exhibit the highest levels of anxiety, even higher than those in special schools. To provide a clearer picture, we will present the results in a diagram.
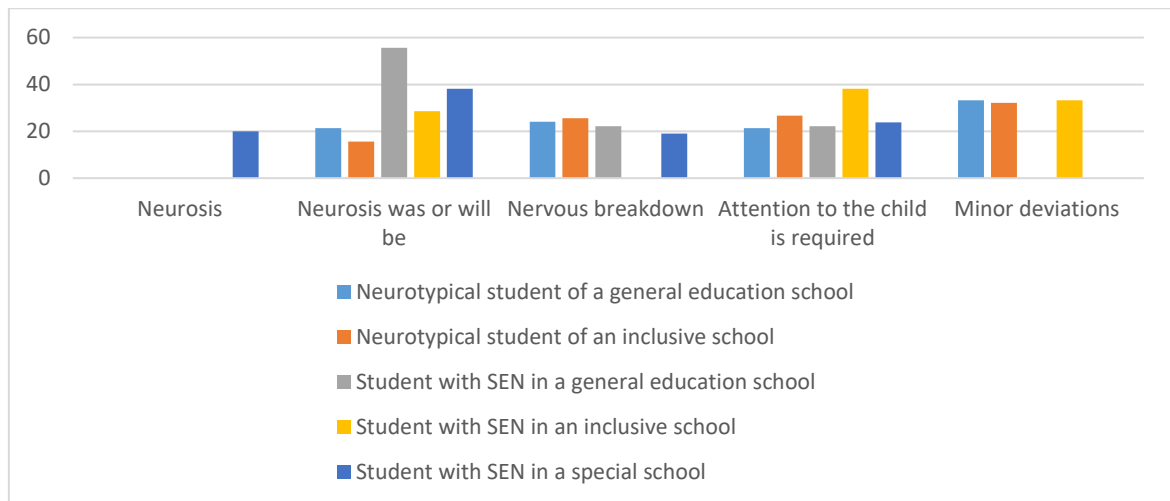
Figure 4.
Results of students' anxiety level assessment based on Zaharova [21] methodology.

To determine the level of self-esteem, we conducted the "Ladder" methodology. This method aims to identify a child's set of beliefs about how they perceive themselves, how they think others perceive them, and how these perceptions are interconnected. The students were presented with an illustration of a ladder with seven steps. Each child was asked to mark the step they believed they would stand on, where step 7 represented the "worst" children in the class, steps 5–6 represented "bad" children, step 4 represented "neither good nor bad," steps 2–3 were for "good" children, and step 1 was reserved for the "best" children in the class. The results of this methodology are presented in Table 4 and illustrated in Figure 5.

Table 4.
Results of Self-Esteem Level Assessment Based on the "Ladder" Method.

Student Category / Group	Characteristics of the self-esteem level		
	Excessive self-esteem Number of students (%)	Adequate self-assessment Number of students (%)	Low self-esteem Number of students (%)
A neurotypical student of a general education school	30 (20)	59 (39.4)	39 (40.6)
A neurotypical student of an inclusive school	29 (32.2)	56 (62.2)	5 (5.6)
Student with SEN in a general education school	4 (22.2)	6 (33.3)	8 (44.5)
A student with SEN in an inclusive school	4 (19.04)	15 (71.4)	2 (9.56)
A student with SEN in a special school	6 (28.5)	4 (19.04)	11 (52.96)

Source: The "Ladder" Method [22].

An analysis of Table 4 reveals that in the category of neurotypical students in general education schools, a high percentage exhibit low self-esteem, 40.6%. Nearly one-third demonstrate adequate self-esteem, while 20% show inflated self-esteem. This trend may be attributed to high levels of competition and academic pressure in general education settings. In contrast, the majority of neurotypical students in inclusive schools exhibit adequate self-esteem, 62.2%. Only a small percentage (5.6%) show low self-esteem, while about one-third have inflated self-esteem. The inclusive environment appears to positively influence neurotypical students' self-perception, fostering the development of a more realistic self-concept. The relatively higher percentage of inflated self-esteem may be due to the academic advantages neurotypical students experience compared to peers with special educational needs (SEN), giving them a sense of superiority in the classroom. Regarding students with SEN, those in general education schools also tend to have low self-esteem, with 44.5% falling into this category. Only 33.3% report adequate self-esteem, while 22.2% exhibit inflated self-esteem. These findings suggest that students with SEN in mainstream schools may face challenges in forming a healthy self-image due to a lack of individualized support and limited opportunities for socialization. Students with SEN in inclusive schools demonstrate significantly better outcomes. More than 70% of them have adequate self-esteem, only 9.56% have low self-esteem, and fewer than 20% exhibit inflated self-esteem. These results indicate that inclusive environments can positively impact the self-esteem of students with SEN, contributing to improved socialization and greater self-confidence. In contrast, among students in special education schools, 50% report low self-esteem, while only 19.04% demonstrate an adequate level. This suggests a tendency toward reduced self-worth in these settings, likely due to limited social interaction and a lack of positive reinforcement. Additionally, low self-esteem in this group may be closely linked to their diagnosis or perceived limitations, reinforcing a sense of isolation or internalization of their condition. This inward focus can hinder their social engagement and ability to maintain interpersonal relationships.

In summary, inclusive educational settings seem to promote the development of adequate self-esteem in both neurotypical students and students with SEN. While children in general education and special schools are more susceptible to low self-esteem, inclusive environments help build confidence, encourage realistic self-assessment, and support better psychological adjustment.
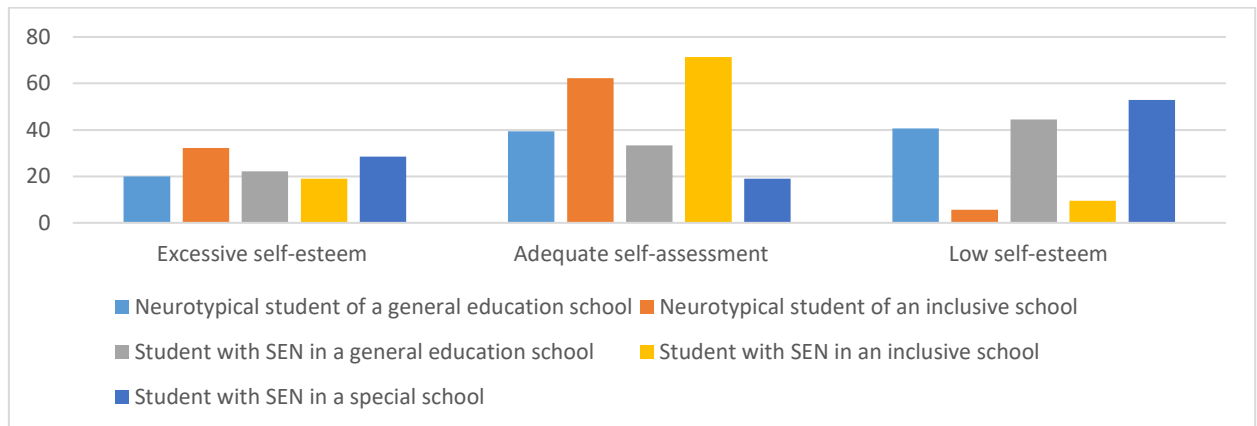
Figure 5.
Results of Self-Esteem Level Assessment Based on the "The "Ladder" Method [22].

A person's self-esteem and socialization are closely interconnected. Self-esteem is largely shaped by social processes. One of the main reasons individuals feel valued and unique lies in their relationships they have friends and belong to social groups that acknowledge their importance. Children who perceive themselves as significant members of their family, peer group, community, and cultural environment tend to have a positive self-image. Conversely, individuals with low self-esteem may struggle to maintain or form new social relationships, as they are less inclined to seek out social interaction. Based on the research findings, we can conclude that the overall level of socialization among students is moderate. When comparing the readiness levels of future teachers with the degree of students' socialization, several key conclusions emerge. Although the student teachers demonstrated an above-average level of professional competence, the socialization level of children with special educational needs (SEN) remains moderate. This highlights the need for a comprehensive, interdisciplinary, and systemic approach to supporting socialization in inclusive settings. These findings suggest that a teacher's readiness, while necessary, is not sufficient on its own to ensure successful social integration. Effective socialization also requires active support from the educational environment, families, and a team of psychological and pedagogical specialists. Moreover, the success of socialization depends on various additional factors, including the developmental level of children with SEN, the characteristics of the inclusive environment, and the involvement of professionals such as psychologists, special education teachers, social workers, and tutors, as well as parental participation.

Furthermore, the moderate socialization outcomes observed among children with SEN may reflect objective limitations, such as psychophysical developmental delays or communication disorders, which can be difficult for a single educator to address without external support. Therefore, we believe that continued targeted efforts are needed to address systemic factors influencing children's socialization. These efforts should include fostering an inclusive culture within educational institutions, implementing mentorship and tutoring programs, and actively involving neurotypical peers in the social integration of children with SEN by strengthening peer interaction and cooperation.

5. Conclusion

For children with special educational needs (SEN) to achieve effective socialization, it is essential that they are included in inclusive learning and developmental environments. Such settings provide a more complex and stimulating educational context, along with opportunities to observe, learn from, and interact with peers without disabilities. The socialization of children with SEN within inclusive environments is a multifaceted and crucial process that requires a humane and comprehensive approach aimed at developing social skills, a sense of belonging, and self-confidence. In this context, the readiness of teachers to support the socialization of children with SEN becomes especially important. Equally vital is the organization of meaningful peer interaction, not only during lessons but also during breaks and extracurricular activities. Furthermore, the active involvement of families, support specialists, and school administration plays a critical role in ensuring successful social integration.

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